

Appl. No. : 10/654,542
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REMARKS

Claims 1-7, 9-23 and 25-27 were pending and Claims 8 and 24 were canceled prior to entry of the amendments herein. Claims 1, 14, and 27 are amended and Claim 23 is canceled herein.

Rejections Under 35 U.S.C. §102/103

Claims 14-21 and 25-27 are rejected under 35 U.S.C. §102(e) as being anticipated by Chen et al., U.S. Patent No. 6,857,945. Claims 1, 3-7, 10-13, and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chen. Claims 2, 22, and 23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chen in view of Kajiwara et al., U.S. Patent Publication No. 2002/0115397. Claim 9 is rejected under 35 U.S.C. §103(a) as being unpatentable over Chen in view of Shendon, U.S. Patent Publication No. 2001/0044268. Independent Claim 1 has been amended to recite a single pressure member between the base and the carrier housing, the pressure member configured to apply the force to an entirety of the base to move the base with respect to the carrier housing to cause the base to apply a force onto the process surface. Claim 14 has been similarly amended to recite urging substantially an entire surface of the base by applying a single force to the base with a single pressure member to produce a substantially constant force against a process surface. Claim 27 has been amended to recite contacting the surface of the workpiece to the process surface with a single constant pressure exerted across an entire surface of the base holding the workpiece by a single pressure member within the carrier head. These amendments are fully supported by the specification, as originally filed, at, for example, paragraphs [0033] – [0035] of the specification and Figures 2 and 3. The patentability of Claims 14-21 and 25-27 will also be discussed here.

None of the cited references discloses or suggests a single pressure member configured to apply a single force to move an entirety to the base to cause the base to apply the force to the process surface, as recited in amended independent Claim 1, or urging substantially an entire surface of the base by applying a single force to the base with a single pressure member to produce a substantially constant force against a process surface as recited in amended Claim 14, or contacting the surface of the workpiece to the process surface with a constant pressure exerted

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across an entire surface of the base holding the workpiece by a single pressure member within the carrier head as recited in amended Claim 27.

Chen et al. teach applying different pressures to different radial regions of the substrate to compensate for non-uniform polishing rates due to non-uniform polishing rates cause by other factors or due to non-uniform thickness of the substrate. See Chen et al, at col. 4, lines 37-51. Similarly, Kajiwarra et al. and Shendon also teach to apply different pressures to different parts of the substrate. See Kajiwarra et al., at paragraph [0080]; Shendon, at paragraph [0047]. Shendon specifically teaches that the carrier 24 “may be used to reduce the pressure [between the pad 22 and the substrate 12] at the center of the substrate 12 to address center over-polishing.” Shendon, at paragraph [0047]. None of the cited references discloses or suggests a single pressure member configured to apply a single force to move the entire base or to cause an entire surface of the base to exert a single pressure or force against a process surface, as recited in the amended claims.

Furthermore, as noted by Applicants in the previously filed response and by the Examiner in the Final Office Action, none of the cited references, including Chen et al., discloses or suggests a spring constant of the process surface that is greater than a spring constant of the pressure member, as recited in independent Claims 1, 14, and 27. None of the cited references teaches any relationship between these two spring constants. Contrary to the Examiner’s assertion, Applicants submit that it would not have been obvious, in combination with the remainder of the claims, to select a pad having a spring constant greater than that of the pressure member.

Thus, independent Claims 1, 14, and 27 (as amended) are patentable, as they are not obvious over the cited references, either alone or in combination. Claims 2-7, 9-13, 15-23, 25, and 26, which depend from and include all of the limitations of amended Claim 1, 14, or 27, are also patentable over the cited references. Furthermore, each of the dependent claims recites additional distinguishing features of advantage and utility.

Conclusion

Applicants respectfully submit that all of the pending claims are patentably distinguishable over the art of record. The cited references, either alone or in combination, do not teach or suggest Applicants’ claimed invention.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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AMEND

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